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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/987,592	11/15/2001	Adam Peter Gawne-Cain	P51380US	7374

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YOUNG & THOMPSON
745 SOUTH 23RD STREET 2ND FLOOR
ARLINGTON, VA 22202

EXAMINER

THAI, HANH B

ART UNIT	PAPER NUMBER
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2171

DATE MAILED: 03/31/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/987,592

Applicant(s)

GAWNE-CAIN, ADAM PETER

Examiner

Hanh B Thai

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 November 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

This is in response to Application filed November 15, 2001 in which claims 1-18 are presented for examination.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arun et al (US Patent no. 6,631,386) in view of Larson (US Patent no. 6,571,244).

Regarding claims 1, 17 and 18, Arun discloses a database management system for maintaining chunks of data indicative of the states of a database comprising a plurality of data items, both before and after a transaction modifying the state of the database, the system comprising:

(a) permanent records of the state of the database before the database-modifying transaction and the state of the database after the database-modifying transaction (see col. 4, lines 49-67, Fig.5, 6A-B and corresponding text, Arun);

(b) relation determination means for relating at least one parent data item in the data chunk indicative of each database state to at least one dependent data item in the same data chunk (see Fig.3 and corresponding text, Arun). Fig.3 of Arun showing that relation of the data node of the database state to one or more leafnodes from the same root;

(c) root determination means for determining the position of a root data item in the data chunk indicative of each database state to which other data items in that data chunk are related (see Fi.3 and col. 6, line 63 to col.7, line23, Arun). The system of Arun allows the user to modify and update the root version. Therefore, "the position of a root" must be determined; and

(d) state determination means for determining the state of the database after the database-modifying transaction by relating the root data item corresponding to that database state to both at least one data item in the data chunk corresponding to that database state and at least one data item in the data chunk corresponding to the state of the database before the data-modifying transaction (see col.6, line 63 to col.8, line 3; Fig.5, 6A-B and corresponding text, Arun).

Arun, however, does not disclose a memory means for holding data chunks providing permanent records. But, it well known to have a memory for storing data record as evident by Larson (see Fig.1-2, Fig.7 and corresponding text, Larson). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Arun to include the memory means for containing data records as taught by Larson. The motivation of doing so would have been to efficiently modify and manage data records.

Regarding claim 2, Aron/Larson combination further discloses the state determination means is arranged to relate the root data item in the data chunk corresponding to the database state of the database after the database-modifying transaction to at least one dependent data item

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by way of at least one parent data item by use of the relation determination means associated with that parent data item (see Fi.3 and col. 6, line 63 to col.7, line23, Arun).

Regarding claim 3, Aron/Larson combination further discloses that the state determination means is arranged to record the position of the parent data item corresponding to each dependent data item during the tracking of data items related (see Fi.3 and col. 6, line 63 to col.7, line23, Arun).

Regarding claim 4, Aron/Larson combination further discloses a new record compiling means is provided to compile a supplementary chunk of data indicative of the state of the database after the database-modifying transaction and is arranged to copy those data items from the previous record which have been modified by the transaction whilst not copying those data items from the previous record which have not been modified by the transaction (see col. 7, lines 24 to col. 8, line 3, Arun).

Regarding claim 5, Aron/Larson combination further discloses the new record compiling means is arranged to copy dependent data items from the previous record which have been modified by the transaction, as well as parent items to which those dependent data items are related by the relation determination means (see col.7, lines 24-59, Aron).

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Regarding claim 6, Aron/Larson combination further discloses that the presentation means is provided to present the data items in each record in a different logical structure (see col.2, lines 52-65, Larson).

Regarding claim 7, Aron/Larson combination further discloses that the presentation means is adapted to present the data items in the form of a relational database (see col. 26, lines 45-51, Arun).

Regarding claim 8, Aron/Larson combination further discloses that the presentation means is adapted to present the data items in the form of an object database (see col. 5, lines 27-56, Arun).

Regarding claim 9, Aron/Larson combination does not disclose that the presentation means is adapted to present the data items in the form of a virtual disk drive. But, it is obvious to have a computer software interface which allows other computer programs to support such functions of updating or modifying data.

Regarding claim 10, Aron/Larson combination further discloses that the previous state location means is provided to relate the data chunk indicative of the state of the database after the database-modifying transaction to the position of the data chunk indicative of the state of the database before the database-modifying transaction (see Fi.3 and col. 6, line 63 to col.7, line 23, Arun).

Regarding claim 11, Aron/Larson combination further discloses a version control system (VCS) defining branch points at which alternative versions of the logical state of the database are allowed to develop in parallel (see element 11, Fig. 1 and corresponding text, Arun).

Regarding claim 12, the combination system of Aron/Larson discloses in Fig. 1 a multi-user system permitting several users to modify the database simultaneously to produce alternative versions of the state of the database after modification, wherein the memory means is adapted to permanently hold a record of the state of the modified database produced by each user together with an indication of the user's logical view of the database before modification.

Regarding claim 13, Aron/Larson combination does not disclose the step of providing the user with an undo/redo mechanism. But, the combination system discloses the modification state of database. Therefore, it must have the undo/redo mechanism in the modified function of the system.

Regarding claim 14, Aron/Larson combination further discloses the analyzing means is provided to analyze database-modifying transactions made by the user (see col. 8, line 56 to col. 9, line 4, Arun).

Regarding claim 15, Aron/Larson combination further discloses identifying means is provided to identify common mistakes made by user in making database-modifying transactions (see col. 9, lines 36-54, Arun).

Regarding claim 16, Aron/Larson combination further discloses that each record contains metadata providing information relating to the creation of the record (see col. 1, lines 7-32, Arun).

Conclusion

2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

1. Katzenberger (US Patent no. 5,970,496) discloses a method and system for storing information in a computer system memory using hierarchical data node relationships.

2. Thomas et al. (US Patent no. 6,460,052) discloses a method and system for performing fine grain versioning.

3. San Andres et al (US patent no. 5,956,489) discloses a transaction replication system and method for supporting replicated transaction-based services.

4. Sarkar (US Patent no. 5,561,795) discloses a method and apparatus for audit trail logging and data base recovery.

5. Kanome (US Patent no. 6,205,450) discloses a computer system capable of restarting system using disk image of arbitrary snapshot.

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3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh B Thai whose telephone number is 703-305-4883. The examiner can normally be reached on 8 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on 703-308-1436. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Hanh Thai *HT*
Art Unit 2171
March 25, 2004


UYEN LE
PRIMARY EXAMINER